

AMENDMENT

In the Claims:

1. (currently amended) A Coriolis mass flow sensor, comprising:
 - a flow tube;
 - a tube position sensor, including
 - a light source;
 - an optics module body defining first and second openings, the second opening having an axis oriented generally transverse to an axis of the first opening;
 - a light pipe received in the first opening of the optics module body, the light pipe having a light inlet situated to receive light from the light source, and a light outlet for emitting light received from the light source;
 - a lens situated in the second opening of the optics module body for receiving light from the light pipe light outlet;
 - a light detector for receiving light from the light pipe light outlet; and
 - a drive device for vibrating the flow tube, such that the flow tube moves through a light path between the light outlet of the light pipe and the light detector.
2. (original) The Coriolis mass flow sensor of claim 1, wherein the light pipe defines a polygon-shaped cross section.
3. (original) The Coriolis mass flow sensor of claim 2, wherein the light pipe defines a generally square cross section.

4. (currently amended) The Coriolis mass flow sensor of claim 1, further comprising a sensing aperture having a predetermined shape situated between the light outlet of the light pipe and the light detector, the sensing aperture passing a portion of the light emitted from the light outlet of the light pipe to the light detector, such that the light entering the light detector has the predetermined shape.

5. (original) The Coriolis mass flow sensor of claim 4, wherein the predetermined shape is optimized to improve the linearity of the tube position sensor.

6. (original) The Coriolis mass flow sensor of claim 4, wherein the predetermined shape is a triangle.

7. (original) The Coriolis mass flow sensor of claim 1, wherein the light outlet is angled to direct the light emitted from the light outlet in a desired direction.

8-9. (canceled).

10. (currently amended) The Coriolis mass flow sensor of claim 91, wherein the optics module body defines a third opening having an axis oriented generally parallel to the axis of the first opening, the third opening having the light detector, and the sensing aperture situated therein.

11. (original) The Coriolis mass flow sensor of claim 10, further comprising a mirror adjacent the second and third openings to direct light from the second opening into the third opening.

12. (original) The Coriolis mass flow sensor of claim 10, further comprising a blocking aperture situated in the third opening, the blocking aperture blocking a portion of the light emitted from the light outlet of the light pipe.

13. (original) The Coriolis mass flow sensor of claim 10, further comprising a lens situated in the third opening.

14. (currently amended) The Coriolis mass flow sensor of claim 91, further comprising a mirror adjacent the first and second openings to direct light from the light outlet of the light pipe into the second opening.

15. (original) The Coriolis mass flow sensor of claim 14, wherein the light outlet of the light pipe and the mirror are on generally opposite sides of the flow tube. .

16. (original) The Coriolis mass flow sensor of claim 1, further comprising:
a second light source;
a second light pipe having a light inlet situated to receive light from the second light source, and a light outlet for emitting light received from the second light source;
and

a second light detector for receiving light from the second light pipe light outlet.

17-24. (canceled)